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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,953	03/02/2004	Richard E. Riman	P22,557-A USA	3676

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EXAMINER
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KOSLOW, CAROL M

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/791,953

Applicant(s)

RIMAN ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/23/05; 6/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 1755

The references CA-CF cited in the information disclosure statement filed 3 June 2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the titles of the articles were not required and the relevant pages are missing from references CA-CC and CF. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

These references will be considered once the missing required information is provided on a new PTO-1449.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The Examiner is unable to find the subject matter of claims 15 and 16 into the specification. Applicants can either point out where the claimed subject matter is found in the specification or they can insert the subject matter into the specification to overcome the rejection.

The disclosure is objected to because of the following informalities: On page 5, line 4, "cd" should be "Cd". Page 5, lines 6-10 implies gallium is a Group IV or V element. Gallium is a Group III element. Appropriate correction is required.

Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1755

Claim 7 is indefinite since it states gallium is a Group IV or V element. It is a Group III element. Claims 6 and 7 are indefinite since it is unclear if the host of nanoparticles is a Group IV or V element or Si or Ga or As or if it is a compound containing these elements. Finally, claims 15 and 16 are indefinite since it is unclear if the "plurality of active ions" means the particles contain more than one type of active ion or if the composition contains a plurality of nanoparticles each activated with a different activating ion.

The embodiments, where the active ion is at least one rare earth ion, have an effective filing date of 19 March 1999. The other claimed embodiments, where the activating ion is not a rare earth ion, have an effective filing date of 2 March 2004.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent application publication 2003/0030067.

This reference teaches ZnS:Mn nanoparticles having a particle size of 1-10 nm. The amount of manganese is 5 mol%. The claimed particles read upon those taught.

Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,036,886.

This reference teaches nanoparticles doped with up to 10 mol% of a rare earth activating ion and an oxide host. Two of the possible host are zirconia, which contains a Group IV

Art Unit: 1755

semiconductive element and zinc oxide, which is a Group II-VI semiconductive compound. The claimed particles read upon those taught.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 5,893,999.

This reference teaches nanosized phosphors having a size of 1-100 nm. One of the phosphors is yttrium oxide or gadolinium oxide doped with 0.05-10 mol% praseodymium. The claimed particles read upon those taught.

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,117,363.

This reference teaches Group II-VI group semiconductor nanoparticles, such as ZnS, doped with 1 mol% or less of an activating ion, such as terbium. These particles have a particle size of 2-3 nm. The claimed particles read upon those taught.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, 9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,893,999.

As stated above, this reference teaches nanosized phosphors having a size of 1-100 nm. One of the phosphors is manganese activated zinc silicate. While the reference does not teach the amount of manganese, one of ordinary skill in the art knows that the amount is that effective to activate the phosphor. This amount would be expected to at least overlap the claimed range since

Art Unit: 1755

the claimed range is the amount that is effective the phosphor. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). These particle can be used in fluorescent inks or in fluorescent lamps, which are standard light sources. In inks and in lamps, the particles can be present in an optical transparent polymeric binder or matrix and in lamps, the particles can be present in an optical transparent glass binder. The reference suggests the claimed particles, composite and device.

Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,113,807.

This reference teaches nanosized phosphor particles. The examples teach europium activated yttria having a size of 1-30 nm and silver activated CdO having a size of 1-5 nm. It also teaches zinc activated GaN particles. While the reference does not teach the amount of the activators, one of ordinary skill in the art knows that the amount is that effective to activate the phosphor. This amount would be expected to at least overlap the claimed range since the claimed range is the amount that is effective the phosphor. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). While the reference does not teach the size of the gallium nitride phosphor, the process used to produce the taught particles is essentially the same as that of examples 1 and 3, where the difference is the heating atmosphere. Examples 1 and 3 show that the atmosphere does not negatively affect the resulting particle size.

Art Unit: 1755

Thus one of ordinary skill in the art would expect the particle size of the doped gallium nitride particles to be in the range of 1-30 nm, absent any showing to the contrary.

Claims 9, 10 and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. patent 5,811,924 in view of U.S. patent 5,893,999.

U.S. patent 5,811,924 teaches a fluorescent lamp, which is a standard light source, comprising a ultrafine phosphor layer composed of an optically transparent polymer resin binder or matrix, such as a fluoropolymer (col. 12, lines 39-40) and 5-500  $\mu\text{g}/\text{cm}^2$  phosphor particles. When this amount is converted to volume percent, it appears to overlap the claimed range, absent any showing to the contrary. The phosphors particles have an average particle size of 10-100 nm and less than 1 % having a size of 300 nm or greater. The phosphor can be a rare earth activated rare earth oxide, where the amount of activating rare earth ion is up to 50 mol%. U.S. patent 5,893,999 teaches ultrafine phosphors particles, which can be used in fluorescent lamps, meeting the compositional and size requirements of U.S. patent 5,811,924. Therefore one of ordinary skill in the art would have found it obvious to use the ultrafine phosphor particles of U.S. patent 5,893,999 as the ultrafine particles in the device of U.S. patent 5,811,924. The references suggest the claimed composite and device.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Art Unit: 1755

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6 and 9-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,699,406.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed particles, composite and devices all fall within the scope of the particles, composites and devices of this application. While the patent is silent as to the attenuation of the claimed composites, one of ordinary skill in the art would expect the patented composites to have an attenuation that at least overlaps that claimed in this application since the patented composites fall within that claimed and the composites are used in the same devices.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
October 13, 2005

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700